Estate
Quality Model

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Estate Quality Model

Case Study

NHS Estates
An Executive Agency of the Department of Health

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First published 1992

This document was originally drafted by the Advisory Group on Estate Management Performance Indicator Working Group. It is being issued in its present form to meet the Working Groups requirement for the urgent issue of EQM. In due course the document will be revised and re-issued in the full NHS Estates house-style.

Case Study of EQM in use

By reading this Case Study users will get a better idea of how to use EQM and the principles on which EQM is based. The Case Study is derived from a real use of EQM by a NHS provider but the names are fictitious.

Chris Harvey, the Estates manager of the Florence Nightingale Hospital, wanted to ensure that the Estates budget allocated by the management board was spent as cost effectively as possible. Chris was well aware that the size of the budget was insufficient to meet all the pressing and competing demands on Estates investment expenditure. While a number of reports had been written on the subject in preceding years Chris still felt that the message of Estates underinvestment was not properly understood by the management board. Naturally there is a link between spending the Estates budget wisely and successfully arguing for an increased budget. Unless Chris could convincingly show that current expenditure was being used effectively it was unlikely that she could win the argument for increased funds.

Chris had heard of EQM and was attracted to it because it addressed a wide range of issues concerned with the quality of the health care environment - issues such as the visual appeal of the internal and external environment of the Florence Nightingale in addition to issues concerning fabric and statutory standards to which Chris devoted much of her time.

Moreover, from what little Chris had heard of EQM, she was aware that EQM's focus on total Estate quality meant that some of the investment categories which it used were outside her control and involved expenditure from the budgets of other managers. For example, the hospital's performance on EQM's Cleanliness indicator was the responsibility of the Support Services manager. Chris felt that this emphasis on total Estate quality, without regard to arbitrary divisions of budgetary responsibility, was an incentive to use EQM. She thought that it might help promote productive discussions between professions and departments and therefore decided to use EQM.

The EQM manual stressed the need to convene a multi-disciplinary group to make assessments of current performance on the thirty indicators in the proforma. Chris called a meeting of representatives of the Nurses and of the Support Services department in addition to members of her own team.

Her first task at this meeting was to "sell" the benefits of EQM to her colleagues. She focused on two messages:

- EQM could help the hospital carry out an Estate quality appraisal and identify strengths and weaknesses in all the key aspects of Estate quality. Chris emphasised EQM's comprehensive approach to the quality of the health care environment and focused not only on those aspects which formed the traditional concerns of the Estate department but also on more immediate concerns of the Nurses such as noise and access.

- EQM could help direct investments in the Estate to ensure that these gave value for money. She emphasised that EQM could help support

the case for investments in areas which were currently underresourced. Many areas were traditionally starved of funds because they were not perceived to have sufficient importance. Nevertheless, she pointed out to her colleagues, if the most important cases for investment were each very costly it might be more cost effective to spend money in areas of lower importance if costs were so much lower as to make it worthwhile[1].

[1] The concept of choosing between competing investments on the basis of cost-benefit, rather than of importance, lies at the heart of EQM. See the user manual for further discussion of this point.

The Nurses, for example, saw this as a way of getting "their" items onto the investment agenda and were consequently keen to participate. The group decided to proceed with EQM and began allocating responsibilities for work on the performance indicators outlined on the proforma. It decided that the Estates department should be responsible for all tasks concerned with the Safety indicators and that it should assess the current level of performance of all Safety indicators (on the 1-2-3-4 scale where 1 represents achievable excellence and 4 is unacceptably poor performance) and estimate the capital and revenue costs needed to improve performance to higher levels.

The group next decided that a sub-group consisting of Nurse and Support Service representatives should be responsible for assessing current levels of performance on the Customer oriented indicators. However, because the task of costing improvements required expertise in cost estimation, this was delegated to a sub-group of Estates and Support Service personnel.

The group then set a date three weeks hence for completing all work on the proforma. In this three week period they estimated current levels of performance on the Customer oriented indicators during a one half-day meeting. The sub-group took care to record in brief the rationales for the "1-2-3-4 assessments" on all relevant indicators in a comments column on the proforma provided for this purpose.

Rather more work was needed to assess performance on Safety indicators and to prepare the associated cost estimates. The Florence Nightingale site comprised buildings of mixed ages which ranged from Victorian to late seventies construction. Performance of each individual building on any one indicator was not uniform. For example, within the modern buildings all asbestos had either been removed or was well encapsulated. This suggested a level 2 performance on the Asbestos Fabric indicator. In the Victorian buildings, however, there were significant areas of asbestos still needing treatment and this suggested a level 3 performance.

The average performance on the Asbestos Fabric indicator for the whole site was calculated by assessing the proportion of the total building area at level 2 and at level 3. Three quarters of the area was at level 2 and the group decided that current performance on Asbestos Fabric for the whole site should be level 2. However, when the Estates group estimated costs of increasing from level 2 to level 1 it took care to remember that the cost of first having to bring one quarter of the site up to level 2 had to be reflected in the cost of bringing the whole site up to level 1.

The Estates group consulted the hospital's estate database to make the assessments of current performance on the Safety indicators. For some indicators however, the existing database was incomplete. With regard to Health and Safety for example, it contained information on Steam Plant but not on the other pressurised piped services which were covered by the new Pressure Systems regulations. Some data gathering was therefore required.

Chris made a list of all indicators for which she needed more information to assess their current performance. She suggested to her team means of acquiring the information to enable these assessments to be made for each indicator. For example, to assess performance on the Security indicators she instructed some of her team to briefly inspect the buildings to see if clear signposts were in place that informed the public of restricted areas. The group then identified the broad composition of each cost of improvement in the comments column of the proforma.

The parts of the proforma, completed by the sub-groups, were integrated. A page is shown below:

Comments

5: Firecode Procedures

1: Full compliance with Firecode and Fire Precautions Act; full training programme implemented; full-time Fire Officer in post and procedures agreed.

2: Training programme not fully implemented; Fire Officer in post and procedures agreed.

3: No training programme; Fire Officer in post.

4: No Fire Officer or training.

Cost of improvement

£10,000 FOR ½ WTE ESTATES EMPLOYEE

	Capital	Life Expectancy	Revenue
4 - 3			
3 - 2			
2 - 1	–	–	10

It shows that the group judged the Florence Nightingale hospital to merit a rating of 2 on indicator No.5, Firecode Procedures. It also shows that improvement to level 1 in Firecode Procedures would cost in the order of an additional £10,000 annual revenue but would have no capital cost implications. The notes in the right hand column record that £10,000 would buy an additional 0.5WTE *middle ranking estates employee. Such an appointment would allow the designated fire officer to spend more time ensuring that proper fire training programmes were in place.*

With all the assessments of current performance recorded on the proforma, including the estimates of costs of improvements and the notes recording rationales for the judgements, the information was ready for entry to the computer element of EQM.

Chris had previously installed the software on the hard disk of an Estates department computer [2]. She accessed EQM and when presented with the **Main Menu** elected to **set up a New model**. The computer loaded up the default benefit scores showing what benefit is gained by proceeding up through the levels of performance in each of the indicators. The computer next loaded the weights associated with each of the indicators which showed their relative importance [3].

The default benefit scores and weights are written into EQM (although they can be modified by users as will be seen later).

[2] *The installation procedure is explained in the EQM manual.*

[3] *Relative importances have been established by a wide body of NHS professionals.*

Chris next selected **Set level of performance and associated improvement costs** from EQM's **Main Menu** and entered the information on the indicators contained in the proforma. For example, to enter performance and cost information on Legionnaires Fabric she selected item 12 on the screen:

```
ESTATE QUALITY MODEL (v.1)                                  Model 1: Case study
Set level of performance and associated improvement costs


1:  LEGIONNAIRES PROCEDURES            16: FIRECODE FABRIC
2:  KITCHENS PROCEDURES                17: ASBESTOS FABRIC
3:  COSHH PROCEDURES                   18: HEALTH & SAFETY FABRIC
4:  STERILISATION PROCEDURES           19: SECURITY FABRIC
5:  FIRECODE PROCEDURES                20: DISCHARGE TO LAND FABRIC
6:  ASBESTOS PROCEDURES                21: DISCHARGE TO ATMOSPHERE FABRIC
7:  HEALTH & SAFETY PROCEDURES         22: DISCHARGE TO DRAIN FABRIC
8:  SECURITY PROCEDURES                23: VISUAL COMFORT
9:  DISCHARGE TO LAND PROCEDURES       24: THERMAL COMFORT
10: DISCHARGE TO ATMOSPHERE PROCS      25: NOISE COMFORT
11: DISCHARGE TO DRAIN PROCEDURES      26: MAINTENANCE
12: LEGIONNAIRES FABRIC                27: CLEANLINESS
13: KITCHENS FABRIC                    28: CAR PARKS
14: COSHH FABRIC                       29: SIGNPOSTING
15: STERILISATION FABRIC               30: ACCESS
     -------------------------------------------------------
    |Type in indicator number (or X to exit), then press ENTER: |
    |                                                           |
```

The four levels of performance for Legionnaires Fabric with the definition of each level were displayed:

```
ESTATE QUALITY MODEL (v.1)                                  MODEL 1: Case study
Set level of performance and associated improvement costs


12:  LEGIONNAIRES FABRIC

     1: Full compliance with Code of Practice.


     2: Full compliance with Code of Practice in high
        risk areas.

     3: Areas of non-compliance identified but not resourced.


     4: Areas of non-compliance remain unidentified .

                                                 ---------
     I: Ignore                                  | Not set |
     -------------------------------------------------------|
    |Select level (or X to exit), then press ENTER:         |
    |                                                       |
```

She entered "3" from the proforma to signal that level 3 most closely fitted the situation at the Florence Nightingale. The program prompted her for estimates of the costs of improving performance in Legionnaires Fabric and she transferred these estimates from the completed proforma as follows:

```
ESTATE QUALITY MODEL (v.1)                                  Model 1: Case study
Set level of performance and associated improvement costs

12: LEGIONNAIRES FABRIC


                    ---------------------
                   |Capital Life Revenue |
                   |£(000)  Exp  £(000)  |
                   |---------------------|
   3->2            |   70   25     2     |
   2->1            |   55   15     3     |
                   |                     |
                    ---------------------


Use up/down cursor keys to move to other cells. Finish by pressing ENTER
```

The proforma contained a brief explanation of the rationale for these estimates. "Improvement to level 2 in Legionnaires Fabric requires the installation of new hot water supply calorifiers and feed tanks at an approximate capital cost of £70,000 with a reasonable expectation that the installation would last 25 years before needing replacement. In addition, an extra manpower commitment would be incurred to maintain the new installation (a fraction of a WTE, estimated at £2,000 per annum).

"Improvement to level 1 requires the provision of a new hot water supply pipework distribution system at a capital cost of £55,000, with a life expectancy of 15 years and an annual revenue commitment of £3,000."

Some indicators in EQM may be ignored. For example, newly built hospitals in which no asbestos is present. EQM allows the user to ignore an indicator if appropriate. This facility is available under **Set performance measures and associated costs** *on the* **Main Menu.** *Instead of typing in a 1-2-3-4 performance measure for a particular indicator, the indicator is ignored by typing in* "I".

The Florence Nightingale group were unable to ignore any indicators.

A further facility concerning the input of performance measures and cost information is available. Most revenue costs recur annually. EQM assumes that this is what is intended for revenue costs. In addition most capital costs are recurrent but not often annually. EQM asks users to specify life expectancies for capital costs. If a user specifies a life expectancy of five years EQM adds this capital cost (incurred every five years) to any revenue cost (incurred annually) and discounts the sum of the two costs at the Treasury discount rate of 6% per annum over a period of 60 years.

However, some costs do not recur. For example, an extraordinary training cost might be a "one-off" cost or a programme to eradicate some backlog maintenance for a piece of equipment on the assumption that once the backlog is cleared the cost of everyday maintenance might be found within the normal maintenance budget. "One-off" costs are declared as capital costs and given a life expectancy of zero. In its calculations EQM then deducts this only once.

Chris next selected **review Costs** from the **Main Menu** to check for input errors and was presented with cost information for indicator 1, Legionnaires Procedures:

```
ESTATE QUALITY MODEL (v.1)                                  Model 1: Case Study
Review costs

 1: LEGIONNAIRES PROCEDURES


                 ---------------------
                |Capital Life Revenue |
                |£(000)  Exp  £(000)  |
                |---------------------|
  3->2          |     0   0    20     |
  2->1          |     0   0    15     |
                |                     |
                 ---------------------




 N=Next   P=Previous   G=Goto    C=edit Costs   X=Exit
```

She systematically scrolled through all the indicators in order by pressing "N" for Next (shown at the bottom of the screen) and made amendments as necessary. She used "P" for Previous to return to the previous indicator.

Alternatively, she could have picked out a particular indicator by entering "G" for Goto, then entering the number of the indicator she wished to review (followed by ENTER).

Errors rectified, Chris and her staff were ready to get some "first-pass" results.

She selected **Display priority order of estate investments** from the **Main Menu**. EQM examined all possible improvements in current performance on all indicators and found those improvements which achieved the best balance between what they cost to implement and what benefit returns they achieved for the hospital. EQM identified those investments which achieved the greatest benefit returns relative to the money invested - that is, those investments with the greatest benefit to cost ratio.

The benefit assessments at this point are based upon the default benefits and weights programmed into EQM. Chris Harvey and her team might check the effects of changing these later. The cost figures used in the calculations are life-cycle costs calculated from the costs input. Life-cycle costs reflect the present worth of expenditure over 60 years discounted at the Treasury discount rate of 6% per annum. Investment decisions based on costs calculated in this way is a widely used practice in both public and private sectors. It is considered to be the best way of obtaining an accurate reflection of the true cost of an investment.

EQM had calculated the ratio of benefit to cost for all possible improvements across all 30 indicators. The highest ratio of benefit to cost was placed at the top of the **priority order** the next highest placed second etc. The list produced using **Display priority order of estate investments** was as follows:

ESTATE QUALITY MODEL (v.1) — Model 1: Case Study

PRIORITY ORDER OF ESTATE INVESTMENTS

		LEVEL	YR1 £(000)	cumulative YR1 £(000)	cumulative LCYCLE £(000)	B/C RATIO
1	27: CLEANLINESS	3->2	13	13	73	60
2	12: LEGIONNAIRES FABRIC	3->2	72	85	194	48
3	1: LEGIONNAIRES PROCEDURES	3->2	20	105	537	22
4	18: HEALTH & SAFETY FABRIC	4->3	8	113	674	18
5	14: COSHH FABRIC	3->2	51	164	860	13
6	29: SIGNPOSTING	4->2	39	203	1006	13
7	13: KITCHENS FABRIC	3->1	315	518	1685	13
8	5: FIRECODE PROCEDURES	2->1	38	556	2336	13
9	23: VISUAL COMFORT	3->2	50	606	2419	12
10	19: SECURITY FABRIC	4->3	53	659	2554	12
11	30: ACCESS	2->1	25	684	2660	12
12	2: KITCHENS PROCEDURES	3->1	40	724	3345	11
13	18: HEALTH & SAFETY FABRIC	3->2	110	834	3736	11
14	1: LEGIONNAIRES PROCEDURES	2->1	15	849	3993	10
15	24: THERMAL COMFORT	2->1	500	1349	4580	8

U=Up D=Down P=Print X=Return to Main Menu

The first column showed the ordered list of improvements that might be made to the hospital's Estate quality performance. The model recommended that in conditions of scarce funding investment items should be chosen from the top of the list in preference to those from lower down the list.

It is necessary to stress the point made in the EQM manual that this is not a list of indicators in order of importance. Appendix 2 of the user manual shows the relative importances of the Estate quality indicators preprogrammed as default values into the EQM software. Of the many ways in which an ordering in terms of importance differs from a cost-benefit ordering, two are perhaps most crucial:

- *It may be very important to tackle a particular problem area (perhaps because of the degree of risk being faced while it remains unresolved, for example, Firecode Fabric). It may be that a combination of other improvements carried out together give greater benefit to the hospital by reducing risks rather than directing resources at one area*

such as Firecode Fabric. If this combination of improvements is similarly priced or cheaper (in life-cycle cost terms) than improving one indicator, it makes sense to commit funds to this combination of improvements. This may be the sensible thing to do even where it is commonly agreed that for a particular hospital Firecode Fabric is overall the single most important indicator. Making such decisions where the benefits from combinations of improvements vis-à-vis investment in a single improvement are assessed and balanced against the costs, is the essence of risk management in hospitals.

- *It is not unusual for Estates managers to find that the most important problems in need of rectification cannot be tackled because they are not affordable within current budgets. In these circumstances the question might be asked how should the budget be most cost-beneficially spent? A cost-benefit ordering of possible investments can help answer this question. A simple ordering in terms of indicator importance cannot. This is why EQM uses cost-benefit analysis as the basis of its recommendations for an Estate quality investment strategy.*

The recommendation for the Florence Nightingale was that an available annual budget of approximately £200,000 for Estate quality improvements should be spent on:

- CLEANLINESS
- LEGIONNAIRES FABRIC
- LEGIONNAIRES PROCEDURES
- HEALTH & SAFETY FABRIC
- COSHH FABRIC
- SIGNPOSTING

Read the **priority order** *list shown above by finding the fifth column labelled* **Year 1 Cumulative** *and reading down this list of cumulative total costs (capital and revenue) incurred in Year 1 until the total of £200,000 has been reached. The six items have a total cost in the first year of £203,000.*

The implication of the cost and benefit figures contained in the model is that the six items constitute a package of improvements which are more cost-beneficial for increasing the quality of the hospital's Estate than any other amongst the indicators contained in EQM. Naturally there may be other factors effecting the investment decision which are not modelled within EQM. These factors may require the package to be modified. However, to stress what is said in the manual, EQM's role is to aid the investment process, not to take responsibility for it away from management.

The six items are a mix of factors relating to safety oriented factors on the one hand and customer oriented factors on the other. This is not untypical of many users of EQM. The cost-benefit analysis quite frequently recommends that a significant part of available Estate investment funds is invested in items such as cleanliness, signposting, access around the site, visual effect on patients and visitors, suitable

environmental conditions (eg reduction of draughts and solar gain) and clearly not all the budget is reserved for statutory factors. Improvements in the customer oriented factors (such as cleanliness and signposting) are relatively cheap and, many providers believe, give significant benefits to the hospital.

Reading down column 3 **Year 1 cumulative** *costs in the* **priority order** *shows how the costs in the first year of investment increase as one moves down the list of cost-benefit ordered investments.*

The reasons for including **Year 1** *costs and* **Year 1 cumulative** *costs in the* ***priority order*** *of Estate investments is to help managers decide which package of Estate investments is affordable. The size of the first year budget will determine how far down the priority order list of investments it is possible to go. The* **Year 1** *costs do not however play any part in determining the actual ordering of the investments. It is the life-cycle cost figures (column 5) which combined with the benefit scores and weights determine the priority order.*

The **benefit-cost ratio** *calculated for every possible Estate quality improvement is derived from the combination of the particular investment's life-cycle cost and its benefit score and weight.* **Benefit-cost ratios** *are shown in simple figures in column 5 of the priority order. The* **benefit-cost ratios** *get progressively smaller down the list.*

A further point to note about the priority order is that EQM may "jump a level" in recommending investments for Estate improvement. Rather than recommending for example, an investment is made to improve a current level 4 performance to a level 3 performance, it will on occasions recommend instead that a bigger investment is made to increase to level 2. The reason for this is that an investment to achieve level 3 performance is not cost-beneficial.

There are several examples of this in the priority order shown above. For example, it is recommended that Signposting is improved from level 4 to level 2, missing out level 3. Also investment in Kitchens Fabric is recommended (if the Estates department's budget will stretch to more hygienic worktop materials) to improve from level 3 to level 1.

To see why this happens, look at the profile of cost and benefit scores associated with the Signposting indicator. These can be accessed for all indicators by calling up **review Weights and benefit scores** *on the* **Main Menu** *and typing the reference number 29 for Signposting to produce the screen:*

```
ESTATE QUALITY MODEL (v.1)                    MODEL 1: Case study
Review weights and benefit scores

29: SIGNPOSTING

                          -------------------------
                         |      COST      |        |
                         |----------------|BENEFIT |
                         | YEAR1 |LCYCLE  |        |
                         |-------------------------|
          Level 4        |     0 |      0 |      0 |
          Level 3        |    22 |     78 |     30 |
          Level 2        |    39 |    145 |     90 |
          Level 1        |    51 |    202 |    100 |
                         |       |        |        |
                          -------------------------
                                                10      Weight


N=Next  P=Previous  G=Goto  S=edit scores  W=edit weight  X=Exit
```

Both cost columns are cumulative. That is, the cost of moving from level 4 to level 3 (78) is included in the cost given for level 2 (145). The life-cycle cost of moving from level 3 to level 2 is 145 -78 = 67.

The **Year 1** *costs need not concern us here since they are not used in the cost-benefit calculations. It is the other two columns which are of interest - the life-cycle costs and the benefit scores. Notice that the cost of going from level 4 to level 3 (78) is approximately equal to the cost of going from level 3 to level 2 (67). This however, is in marked contrast to the benefit scores. The benefit to be gained from improving to level 3 (30) is half of the benefit to be gained from improving from level 3 to level 2 (90 -30 = 60).*

Improving to level 3 is clearly not a sensible investment, since it costs almost as much but returns only half the benefit of the additional investment to go to level 2.

Hence, in this case, EQM ignores improvement from level 4 to level 3. It evaluates the cost-benefit of improvement from level 4 to level 2 against all other possible investments for Estate quality improvement.

Chris and her staff reviewed the results shown in the **priority order** list. They readily recognised the need identified by the model to invest in reducing the risks associated with Legionnaires disease, COSHH Fabric and the range of health and safety investments collected together under the generic Health and Safety label in EQM. But they were unsure about the primacy given by the model to issues of cleanliness within the hospital. They were aware that once these results became more widely distributed within the hospital the view that it was advisable to invest in improving cleanliness would be well supported. They decided to test the robustness of this result before it became more public.

They were fairly sure that the costs of improvement they had given for Cleanliness were reasonable, but now wished to check the benefits side of

the equation. They selected **review Weights and benefit scores** from the **Main Menu**, pressed "G" for Goto and entered the identifying number for Cleanliness (27). The following information was displayed:

```
ESTATE QUALITY MODEL (v.1)                    MODEL 1: Case study
Review weights and benefit scores

27: CLEANLINESS

                          ------------------------
                          |      COST      |       |
                          |----------------|BENEFIT |
                          | YEAR1 |LCYCLE  |       |
                          |------------------------|
          Level 3         |     0 |     0  |     0 |
          Level 3         |    13 |    73  |    88 |
          Level 1         |   118 |   259  |   100 |
                          |       |        |       |
                          ------------------------
                                                24      Weight


N=Next  P=Previous  G=Goto  S=edit scores  W=edit weight  X=Exit
```

The manual explained that the weights perform the function of showing how important it was to make improvements in one indicator compared with improvements in another. The default weight for Cleanliness was 24 when current performance was at level 3.

Chris and her team compared a number of the weights of other indicators with "24".

Many of the key safety oriented factors had weights higher than 24 *(for example, Kitchens Fabric has a weight of 42 on a current performance of level 3 and Firecode Fabric has a weight of 49 on a current performance of level 3)*. But they were still unsure whether the weight of Cleanliness might have been overestimated. Chris selected the option to edit the weight (by pressing "W" for **edit Weight**) and decided to reduce the weight of Cleanliness by 25% to 18, returned to the **Main Menu** and selected **Display priority order of estate investments**. The **priority order** showed:

ESTATE QUALITY MODEL (v.1) Model 1: Case Study

PRIORITY ORDER OF ESTATE INVESTMENTS

		LEVEL	YR1 £(000)	cumulative YR1 £(000)	LCYCLE £(000)	B/C RATIO
1	12: LEGIONNAIRES FABRIC	3->2	72	72	121	49
2	27: CLEANLINESS	3->2	13	85	194	45
3	1: LEGIONNAIRES PROCEDURES	3->2	20	105	537	22
4	18: HEALTH & SAFETY FABRIC	4->3	8	113	674	18
5	14: COSHH FABRIC	3->2	51	164	860	14
6	29: SIGNPOSTING	4->2	39	203	1006	13
7	13: KITCHENS FABRIC	3->1	315	518	1685	13
8	5: FIRECODE PROCEDURES	2->1	38	556	2336	13
9	23: VISUAL COMFORT	3->2	50	606	2419	13
10	19: SECURITY FABRIC	4->3	53	659	2554	12
11	30: ACCESS	2->1	25	684	2660	12
12	2: KITCHENS PROCEDURES	3->1	40	724	3345	11
13	18: HEALTH & SAFETY FABRIC	3->2	110	834	3736	11
14	1: LEGIONNAIRES PROCEDURES	2->1	15	849	3993	10
15	24: THERMAL COMFORT	2->1	500	1349	4580	9

U=Up D=Down P=Print X=Return to Main Menu

The effect of the 25% reduction in weight of Cleanliness was negligible (repositioning Cleanliness to second position). The package of investments therefore remained unchanged.

The process of investigating the effects of changes in estimates (of costs, weights or benefits) is known as sensitivity analysis. It is often very useful to know how far initial judgements or assessments have to be shifted before it makes a significant difference to the result. This helps produce greater confidence in the investment package chosen. It also helps identify where more work or more discussion is needed to corroborate some of the estimates. Frequently quite rough estimates are acceptable if it can be shown by sensitivity analysis that making rather large changes do not yield significantly different results. Subsequent work can be focused on factors where feasible changes produce different investment packages.

After carrying out a number of sensitivity analyses, Chris Harvey called a meeting of the multi-disciplinary group responsible for carrying out the initial work. She presented the results. These were discussed and agreed and a brief paper identifying the package of suggested investments was prepared for presentation to the Executive Board.

About NHS Estates

NHS Estates is an Executive Agency of the Department of Health and is involved with all aspects of health estate management, development and maintenance. The Agency has a dynamic fund of knowledge which it has acquired during 30 years of working in the field. Using this knowledge NHS Estates has developed products which are unique in range and depth. These are described below.

NHS Estates also makes its experience available to the field through its consultancy services.

Enquiries should be addressed to: NHS Estates, Euston Tower, 286 Euston Road, London NW1 3DN. Telephone: 071-388 1188.

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Design Guides – complementary to Health Building Notes, Design Guides provide advice for planners and designers about subjects not appropriate to the Health Building Notes series. *HMSO*

Estatecode – user manual for managing a health estate. Includes a recommended methodology for property appraisal and provides a basis for integration of the estate into corporate business planning. *HMSO*

Capricode – a framework for the efficient management of capital projects from inception to completion. *HMSO*

Option Appraisal Guide – advice during the early stages of evaluating a proposed capital building scheme. Supplementary guidance to Capricode. *HMSO*

Health Building Notes – advice for project teams procuring new buildings and adapting or extending existing buildings. *HMSO*

Health Technical Memoranda – guidance on the design, installation and running of specialised building service systems, and on specialised building components. *HMSO*

Encode – shows how to plan and implement a policy of energy efficiency in a building.

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Nucleus – standardised briefing and planning system combining appropriate standards of clinical care and service with maximum economy in capital and running costs. *NHS Estates*

Concise – software support for managing the capital programme. Compatible with Capricode. *NHS Estates*

Items noted "HMSO" can be purchased from HMSO Bookshops in London (post orders to PO Box 276, SW8 5DT), Edinburgh, Belfast, Manchester, Birmingham and Bristol or through good booksellers. A standing order service is available.

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Designed to meet a range of needs from advice on the oversight of estates management functions to a much fuller collaboration for particularly innovative or exemplary projects.

Enquiries should be addressed to: NHS Estates, Room 335 (address as above).

NHS Estates WIMS Software

WIMS Software is available under three database versions: Unify 2000, Dataflex and Pick and run under various operating systems such as MSDOS, PIC, VMS and UNIX.

All major aspects of Works and Estate Management have been covered by applications/modules within this suite of programs.

WIMS 2000 – integrated database application.

Asset Operational Application – facilities such as Asset Register, Work Planning & Processing and Asset Work History are provided. In the Asset Register, each Asset is assigned a unique identifier and contains comprehensive information. In the Work Planning Section, details of the work that is required to do on the Assets are stored and scheduled.

Labour Management Module – provides full management control of staff and information to measure the effectiveness of directly employed craftsmen.

Capital Asset Application – developed to meet the needs of the NHS Capital Charging initiative, shares a common Asset Register with the Asset Operational Application.

Property and Land Application – allows information on Land and Buildings to be split down into a five level hierarchy; Site, Land Portion, Building, Building Portion and Functional Space.

WIMS Dataflex and WIMS Pick

– well suited for integrated or modular approach.

Asset and Capital Charges – creates a comprehensive register of Capital, Building, Engineering, Electromedical and Vehicle Assets, allowing calculations and reports for Capital Charges, output of data to financial ledgers and the upkeep of a fully detailed inventory.

Stock Control – stock transaction, exception and evaluation as well as 'where used' reports are provided.

The Purchase Order – system generates order requests, monitors goods received and issued 'Payment Authorisation' slips.

Labour Management – full management control and information is provided to measure the effectiveness of both directly employed craftsmen and contract labour.

Contract Maintenance – provides details of service contracts allowing searches of renewal dates, costs and methods of payment. Links can be created to the Asset Management and Financial Control modules.

Energy Management – designed to assist Estates staff and Energy Managers to monitor the consumption and costs of fuels and other consumables in hospitals, and to provide consumption targets based on past data.

Property Management – designed to provide Works Officers with a quick reference to relevant 'property' information regarding estates under their management.

Residential Property – a modified version of the Property module with additional features including details of rent, services provided and occupation.

Property Appraisal – the estate can be assessed for Functional Suitability, Space Utilisation, Physical Condition, Safety & Statutory Requirements and Energy Performance.

Financial Control – provides a history of budget allocation. Expenditures are recorded in a transaction file and reports produced by account code or budget centre for a range of months.

Redecoration Analysis – this module can record redecoration specifications, material coverage rates and surface area information for every room in a building.

Annual Maintenance – records multi-year maintenance or minor capital work and analyses the cost under various categories over a range of years.

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Advisory Group on
Estate Management

Estate
Quality Model

Case Study

NHS Estates